

OCT 07 2003

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of

Applicant: Udayakumar et al.

Application No.: 10/620,516

Filed: July 16, 2003

For: HYDROGEN BARRIER FOR PROTECTING FERROELECTRIC CAPACITORS IN A SEMICONDUCTOR DEVICE AND METHODS FOR FABRICATING THE SAME

## SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

1. Pursuant to 37 C.F.R. 1.97 and 1.98, and in compliance with 37 C.F.R. 1.56, the Office's attention is directed to the patents, pending applications, publications and other information listed on the attached PTO-1449. A copy of each listed document is enclosed except for: (a) pending applications or (b) those previously cited or submitted to the Office in the following application(s) upon which this application relies for an earlier filing date under 35 U.S.C. 120:

Serial No.: \_\_\_\_\_  
Filing Date: \_\_\_\_\_

Regarding any document, publication or other information for which a date is not given on the attached PTO-1449, Applicant(s) believe(s) the same may qualify as "prior" art to this application and should be treated accordingly, although Applicant(s) reserve(s) the right to contest the prior art status of any document, publication or information, should issue arise.

2. Regarding each listed document that is not in the English language, an English-language translation accompanies this Statement as indicated on the attached PTO-1449 or a concise explanation of the relevance of the document is set forth in the following document(s):

- (a)  Copy of each English language version of a search report indicating the degree of relevance found by the foreign office of each document being submitted from the search report.
- (b)  Attachment entitled "Concise Explanation of Relevance of Non-English Language Documents".

3. Pursuant to 37 C.F.R. 1.97(b) this Statement is being filed (one must be checked):

- (a)  Within 3 months of the filing date or date of entry into the National Stage.
- (b)  Before the mailing date of a first Office Action on the merits. If this Statement is not filed before the mailing date of a first Office Action on the merits, the required certification is given below or, in the absence thereof, the Office is authorized to charge the required fee set forth in 37 C.F.R. 1.17(p) to Deposit Account No. 20-0668 for consideration of this Statement.
- (c)  Before the mailing date of a first Office Action on the merits after a first or second submission under 37 C.F.R. 1.129(a).

d)  After the period set forth in 37 C.F.R. 1.97(b) but before the mailing date of either a final action or a notice of allowance.

(1)  The required certification is given below, or

(2)  Enclosed is a check covering the fee set forth in 37 C.F.R. 1.17(p) for consideration of this Statement, or

(3)  Charge the fee set forth in 37 C.F.R. 1.17(p) to Deposit Account No. 20-0668

(e)  After the mailing date of either a final action or a notice of allowance, but before payment of the issue fee. Petition hereby is made for consideration of this Statement and the required certification is indicated below.

(1)  Enclosed is a check covering the fee set forth in 37 C.F.R. 1.17(i)(1), or

(2)  Charge the fee set forth in 37 C.F.R. 1.17(i)(1) to Deposit Account No. 20-0668.

#### 4. Certification (if applicable)

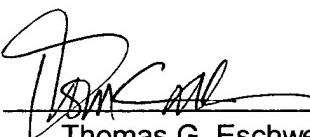
(a)  The undersigned hereby certifies that each item of information contained in this Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than 3 months prior to the filing of this Statement.

(b)  The undersigned hereby certifies that no item of information contained in this Statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to the undersigned's knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. 1.56(c) more than 3 months prior to the filing of this Statement.

5. The Commissioner is hereby authorized to charge any additional fees or credit any overpayment to Deposit Account No. 20-0668.

Respectfully Submitted,

ESCHWEILER & ASSOCIATES, LLC

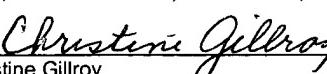
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Christine Gillroy

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**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

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**Complete If Known**

				Application Number	10/620,516
				Filing Date	July 16, 2003
				First Named Inventor	Udayakumar et al.
				Group Art Unit	
				Examiner Name	
Sheet	1	of	2	Attorney Docket No.	TI-35996

**U.S. PATENT DOCUMENTS**

Exam. Initials*	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Doc.	Date of Pub. of Cited Doc. (mm- dd-yyyy)	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			
AA	5,452,178			Emesh et al.	09/19/1995	Entire Document
AB	5,972,722			Visokay et al.	10/26/1999	Entire Document
AC	6,090,697			Xing et al.	07/18/2000	Entire Document
AD	6,177,351	B1		Beratan et al.	01/23/2001	Entire Document
AE	6,242,299	B1		Hickert	06/05/2001	Entire Document
AF	6,261,967	B1		Athavale et al.	07/17/2001	Entire Document
AG	6,291,251	B1		Nam	09/18/2001	Entire Document
AH	6,423,592	B1		Sun	07/23/2002	Entire Document
AI	6,495,413	B2		Sun et al.	12/17/2002	Entire Document
AJ	6,528,386	B1		Summerfelt et al.	03/04/2003	Entire Document
AK	6,534,809	B2		Moise et al.	03/18/2003	Entire Document
AL	6,576,482	B1		Aggarwal et al.	06/10/2003	Entire Document
AM	6,611,014	B1		Kanaya et al.	08/26/2003	Entire Document
AN	2001/0034106	A1		Moise et al.	10/25/2001	Entire Document
AO	2001/0044205	A1		Gilbert et al.	11/22/2001	Entire Document

**FOREIGN PATENT DOCUMENTS**

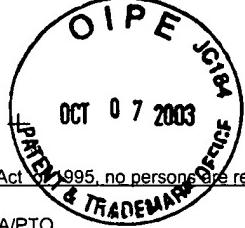
Exam. Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Name of Patentee or Applicant of Cited Doc.	Date of Pub. of Cited Doc. (mm-dd-yyyy)	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Office <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>2</sup> (if known)				
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**OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS**

Exam. Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
CA		"FeRAM Tutorial", ALI SHEIKHOLESLAMI and P. GLENN GULAK, A survey of circuit Innovations in Ferroelectric random-access memories, Proceedings of the IEEE, Vol. 88, No. 3, May, 2000, 3 pages, taken from the Internet at: <a href="http://www.eecg.toronto.edu/-ali/ferro/tutorial.html">http://www.eecg.toronto.edu/-ali/ferro/tutorial.html</a> .	
CB		"A survey of Circuit Innovations in Ferroelectric Random Access Memories", ALI SHEIKHOLESLAMI and P. GLENN GULAK, Proceedings of the IEEE, Vol. 88, No. 5, May, 2000, pp. 667-689.	
CC		"Generic CVD Reactor", CVD Basics, DANIEL M. DOBKIN, Dec. 7, 2001, 3 pages, taken from the Internet at: <a href="http://www.batn.t.com/nigmatics/semiconductor_processing/CVD_Fundamentals/introdu...">http://www.batn.t.com/nigmatics/semiconductor_processing/CVD_Fundamentals/introdu...</a>	
CD		"Physical Vapor Deposition", Cougar Labs, Inc., Dec. 7, 2001, 9 pages, taken from the Internet at: <a href="http://www.cougarlabs.com/pvd1.html">http://www.cougarlabs.com/pvd1.html</a> .	
CE		"The Hydrogen Content of Plasma-Deposited silicon Nitrid", W. A. LANFORD and M. J. RAND, American Institute of Physics, J. Appl. Phys. 49(4), April, 1978, Pgs. 2473-2477.	
CF		"Free Energy Model for the Analysis of Bonding in a-Si <sub>x</sub> N <sub>y</sub> H <sub>z</sub> Alloys", Z. YIN and W. SMITH, J. Vac. Sci. Technol. A, Volume 9, No. 3, May/June, 1991, pg. 972.	

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Sheet	2	of	2	Attorney Docket No.	TI-35996

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Exam. Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	CG	"Comparison Between HCP CVD and PECVD Silicon Nitride for Advanced Interconnect Applications", J. YOTA, M. JANANI, L.E. CAMILLETTI, A. KAR-ROY, Q.Z. LIU, C. NGUYEN, M.D. WOO, J. HANDER, and P. VAN CLEEMPUT, IEEE, 2000, pgs. 76-78.	
	CH	"Hydrogen Role on the Properties of Amorphous Silicon Nitride", F. DE BRITO MOTS, J.F. JUSTO and A. FAZZIO, Journal of Applied Physics, Volume 86, Number 4, August 15, 1999, pgs. 1843-1847.	
	CI		
	CJ		
	CK		
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Examiner Signature		Date Considered	
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